B&T

agricultural SITUATION

the crop reporters magazine

U.S. Department of Agriculture Statistical Reporting Service September 1970.

ORGANOCHLORINE

insecticide

RESTRICTIONS

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RESTRICTIONS

A number of steps have been taken during the past year on both the Federal and State levels to selectively restrict the use of "persistent" insecticides by farmers. And more such moves can be expected in the near future.

On the "persistent" list are many chemicals farmers have long counted on for effective insect control. Most concern is related to uses of aldrin, DDT, and dieldrin, but there's also some worry about the use of benzene hexachloride, heptachlor, lindane, Strobane, TDE, toxaphene, and other organochlorines.

What will be the impact on U.S. agriculture if use of these insecticides is, indeed, restricted by State, local, or Federal governments?

What additional costs will farmers face in shifting over to alternative insecticides?

Organochlorines—the so-called "persistent" insecticides—are effective against a large number of pests, have a long residual life which reduces the number of applications needed for effective control, are relatively safe to handle, and are fairly cheap.

These are the reasons why organochlorines have been the most used insecticides not only in the United States, but throughout the world.

But one of the organochlorines' major good points, their long residual life, is also one of their major bad points in the eyes of those concerned with environmental quality. These residues sometimes remain active in soil and water long after application—and they can be hazardous to certain species of fish and wildlife.

The residues also tend to accumulate in the fatty tissues of man and other warmblooded animals. However, no harmful effect on humans has yet been detected.

The best alternatives to organochlorine insecticides are organophosphorus and carbamate insecticides. These are already used where it is necessary to avoid residues on marketed food and feed products and where the organochlorines do not provide adequate control. But these substitutes are often higher priced than the organochlorines and they usually must be applied more frequently for effective insect control.

The phosphorus and carbamate insecticides have other drawbacks, too. While they degrade more quickly in our environment and pose no serious long-term residue problem, some of them—when first applied—are very toxic to man and other warmblooded animals as well as predatory insects. They have caused numerous poisonings (some fatal) among those who handle or apply them. And some kill wildlife coming into contact with undecomposed particles.

The major carbamate, carbaryl, is relatively harmless to humans, but it is deadly to bees and to insect parasites and predators.

Restrictions on the use of organochlorine insecticides—and the subsequent substitution of organophosphorus and carbamate insecticides—could

(*Continued on page 4*)

USDA ACTIONS ON ORGANOCHLORINE INSECTICIDES

The registration of pesticides is vested in the Secretary of Agriculture under the Federal Insecticide, Fungicide, and Rodenticide Act. That law requires that all pesticides be registered with the Agricultural Research Service before they can be marketed in interstate commerce. Registration is not granted unless scientific evidence is available proving the product is safe and effective when used in accordance with label directions.

It is the policy of USDA to practice and encourage the use of those means of effective pest control which provide the least potential hazard to man, his animals, wildlife, and the other components of the natural environment. Consistent with this policy, the Department has taken a number of steps in the past year or so to selectively restrict uses of DDT and certain other persistent organochlorine insecticides. These measures have been based on a thorough case-by-case evaluation of the benefits and risks involved and the availability of suitable alternatives.

Here's a brief rundown of those actions; more may have been announced after this issue of the Agricultural Situation went to press.

Apr. 15, 1969	DDT	Immediate cancellation of Federal registration for use on lettuce and cabbage once heads have been formed; (use still permitted on these two crops during early growing stages).
July 9, 1969	Aldrin, benzene hexachloride, chlordane, DDT, dieldrin, endrin, heptachlor, lindane, toxaphene.	Immediate suspension of all USDA pest control programs in which these nine pesticides are used, pending a case-by-case program review.
Aug. 15, 1969	Dieldrin, heptachlor	Cancellation of use in USDA's Japanese beetle and European chafer control programs.
Aug. 15, 1969	DDT, dieldrin	Reduction of use in USDA's White-fringed bettle program.
Oct. 28, 1969	All "persistent" pesticides	Reduction of use in quarantine-related pest control operations at military and civilian airports.
Nov. 20, 1969	DDT	Immediate cancellation of Federal registration for use against shade tree pests, tobacco pests, house and garden pests, and pests in such aquatic areas as marshes, wetlands, and swamps; (USDA retained any household and aquatic uses public health officials decide are essential).
Mar. 6, 1970	TDE	Notification of cancellation of Federal registration for all use on tobacco.
Mar. 9, 1970	Aldrin, dieldrin	Notification of cancellation of Federal registration for all uses in marshes, wetlands, and adjacent areas including treatment for control of mosquito larvae, filter fly larvae in sewage systems, and tabanid larvae in outdoor areas.
Mar. 9, 1970	DDT, TDE	Tobacco producers will be required to certify they haven't used pesticide products containing DDT or TDE on 1970 crop tobacco if they wish to be eligible for USDA price supports.
Mar. 25, 1970	Benzene hexachloride, lindane.	Immediate cancellation of Federal registration for soil and foliar uses on beans (including blackeyed peas, lima beans, and cowpeas), citrus, corn, and peas; postharvest application of lindane vapor to lemons in storage also canceled.

(*Continued from page 2*)
have several major impacts on agriculture:

—Farmers and other insecticide handlers would face greater hazards from poisoning. More care in handling pesticides will be a necessity.

—Loss of insect predators and parasites could result in even greater need for insecticides, boosting farmers' bills.

—The loss of pollinating insects could cut production of some crops as well as cause severe losses to beekeepers.

—There's a possibility that insects will develop resistance to currently available substitute insecticides. If other control methods are not developed, it might be necessary to revert to organochlorines.

INSECTICIDE USE

Not too long ago the Economic Research Service contracted with SRS to have its enumerators query 9,600 farmers across the Nation about their use of pesticides. Here's what their answers revealed.

In total, U.S. farmers applied just over 350 million pounds of pesticides in 1966 (not including sulfur and petroleum). That was up about 10 percent from 1964, when a similar survey was made.

Insecticides were the big products applied, at 149 million pounds. That was a shade under 1964 use of 156 million pounds. The major reason for the drop: a decrease of about one-third in cotton acreage. On the major share of the other crops, farmers used as much or more insecticides in 1966 as they did in 1964.

Over 90 percent of the insecticides farmers bought were applied to crops—nearly half the crop total to cotton. About 11 million pounds were used on livestock and livestock premises and less than 1 million pounds went for other purposes.

From a cost standpoint, selective restrictions on the use of organochlorine insecticides, if done gradually over a period of 2 or 3 years, could be imposed with only a modest increase in costs to farmers, concluded a team of researchers with USDA's Economic Research Service. They recently explored the costs of substituting other insecticides for organochlorines on four crops: cotton, corn, peanuts, and tobacco.

Almost nine-tenths of all organochlorines used in U.S. crop production in 1966 were applied to these crops.

More than three-fourths of the 72 million pounds of organochlorines applied to cotton, corn, peanuts, and tobacco in 1966 could have beeen replaced by other insecticides without affecting production, according to the ERS study.

The use of DDT could have been cut back 90 percent; toxaphene 85 percent, and aldrin 32 percent. Total substitution, however, wouldn't have been possible since organochlorine insecticides provided the only effective control for certain insects attacking cotton and corn.

The changeover to less persistent insecticides on the four crops would have cost farmers an additional $2.23 an acre treated—a total of nearly $27 million. This amounted to 0.3 percent of these four crops' farm value in 1966.

The costs calculated for 1966 are believed to represent a maximum for the foreseeable future.

Because of wider spread insect resistance and new, more effective chemicals, use of organochlorines has been on the decline.

The ERS economists figured, after examining trends in insecticide usage and changes in acreages for the four crops, that the cost of restricting organochlorines in 1969 would have been about 18 percent less than in 1966—$22 million, compared with $27 million.

(See pages 5 and 6 for detailed cost breakdowns on each individual crop.)

COTTON

Cotton, our fifth most valuable crop, is the major recipient of insecticides. In 1966, 44 percent of all insecticides used on crops—60 percent of all organochlorines—were applied to cotton.

Cotton farmers treated 5 million acres with 50 million pounds of organochlorines. Of total crop use of organochlorine in 1966, cotton got 88 percent of the toxaphene and 73 percent of the DDT.

Organochlorine use was heaviest in the Southeast, where it accounted for 88 percent of all insecticides. In the Southern Plains, the organochlorines represented only about 60 percent of the total. In California, fewer organochlorines were used because other insecticides offered better control.

In 1966 it would have cost cotton producers about $15.4 million to substitute other insecticides for organochlorines. Roughly two-thirds of the added expense would have gone for alternate chemicals and one-third for more frequent applications of these chemicals. The $15.4 million was 1.2 percent of the farm value of cotton lint and cottonseed in 1966.

On a per acre treated basis, substitution worked out to an average additional cost of $3.12 nationally. The lowest cost was in California, $1.50 a treated acre. In the Delta States, it came to $3.90. In Arizona and New Mexico, it was $7.22 because of the expensive substitute materials needed to control the pink bollworm and the cotton leaf perforator.

Farmers in all cotton growing areas would still need to use some toxaphene and DDT to maintain output at 1966 levels. But toxaphene use could be cut to only about 4.4 million pounds (16 percent of what was actually applied in 1966) and DDT use to 2.2 million pounds (about 12 percent of 1966 use).

TOBACCO

Organochlorines accounted for nearly four-fifths of the 3.9 million pounds of the insecticides used on tobacco in 1966. Nearly 90 percent of the organochlorines were TDE and DDT. These could, however, have been replaced with carbamate and organophosphorus compounds in 1966 at an additional cost of $4.22 a treated acre—a total of $2.6 million for all tobacco growers. This would have been equal to only about 0.2 percent of the value of the 1966 tobacco crop.

PEANUTS

Peanuts, valued at about $272 million, were grown on 1.5 million acres in 1966. One million acres were treated with 3.3 million pounds of organochlorines and 2.3 million pounds of organophosphorus and carbamate insecticides. DDT, toxaphene, and carbaryl were the leading chemicals.

Carbaryl, diazinon, and other less persistent pesticides could have completely replaced the organochlorines used on peanuts in 1966 at an additional cost of $2.90 a treated acre—or a total of about $1.4 million. This was about 0.5 percent of the 1966 value of the peanut crop.

Growers in Georgia, Alabama, and Florida—who applied 96 percent of the organochlorines used on peanuts in 1966—would have incurred most of the additional expenditures. Peanut farmers in the Appalachian Region had already largely shifted over to organophosphorus and carbamate pesticides as insect resistance to organochlorines increased.

CORN

Corn for grain and silage is the most important U.S. crop, valued at nearly $5 billion annually and grown on 66 million acres in 1966. Farmers treated about a third of these acres with insecticides in 1966. Sixty-nine percent of the corn insecticides was organochlorines, principally aldrin and heptachlor.

Changing cultural practices have intensified the corn insect problem and insecticide use has risen rapidly. Formerly, corn was grown in 3- or 4-year rotations of corn, oats, and clover. But today's continuous cropping creates breeding grounds for destructive insects, especially soil pests. In 1966, farmers applied 50 percent more insecticides to corn than they did only 2 years earlier.

Infestations of corn insects are especially heavy in the Corn Belt where nearly half the acres must be treated. Outside this area, only 18 percent of the cornland is treated.

Substituting other insecticides for organochlorines on corn had already begun in 1966. Corn rootworm resistance to aldrin had been spreading in the Western Corn Belt—and the less persistent chemicals, diazinon, parathion, and phorate were becoming more popular.

Substitute chemicals could have been used to control most corn pests other than wireworms and white grubs in 1966. The total cost would have come to an additional $1.23 an acre—about $7.3 million in all. That was 0.2 percent of the farm value of corn.

However, 10.8 million pounds of aldrin and heptachlor, two-thirds of the organochlorines used on corn in 1966, would still have been required to control wireworms and white grubs effectively.

INSECTICIDE RESTRICTIONS: INDUSTRY IMPACT

Bigger sales for some, smaller ones for others—that, basically, would be the expected initial impact on pesticide manufacturers if organophosphorus and carbamate insecticides replaced most organochlorines.

Overall, however, the industry would see a rise in the value of its sales since the substitute chemicals are generally higher priced than the organochlorines. Profits would likely be higher, too, because of the proprietary nature of many substitute products.

The effect would depend on the pace at which restrictions are imposed, however. Too rapid—and the price of organochlorines could plunge while those for substitutes soared.

To meet demand, manufacturers of less persistent substitute chemicals would need time to increase their output capacity, while the makers of organochlorines would need time to phase out their production facilities and to gradually cut their losses.

The loss of the domestic organochlorine market could also have a dampening effect on research and development of new pesticide products.

Pesticide research costs are high. It's been estimated that only one in 1,800 new compounds reaches the retail market. And the time lapse between the first experimentation and a marketable product is said to average 2 to 5 years.

Most research, discovery, development, and production of pesticides is done by firms with large financial resources. With a more limited market, and with the prospect of continued close surveillance of pesticide use and greater requirements for registering new products, these firms may slow their research efforts.

INSECTICIDE RESIDUES: HOW LONG DO THEY STAY?

How long can you expect an insecticide to remain in the soil after you have stopped applying it? One year? Five years? Ten years?

Agricultural scientists don't have all the answers yet, but studies at the University of Wisconsin indicate residues of certain insecticides will be in the soil longer than a decade.

Working with aldrin and heptachlor, Wisconsin entomologists found 4 to 5 percent of these potent materials were still in the soil 5 years after they'd been applied. The residues, however, were breakdown products of the original insecticides—some more toxic than their forebears, some no longer toxic to insects at all.

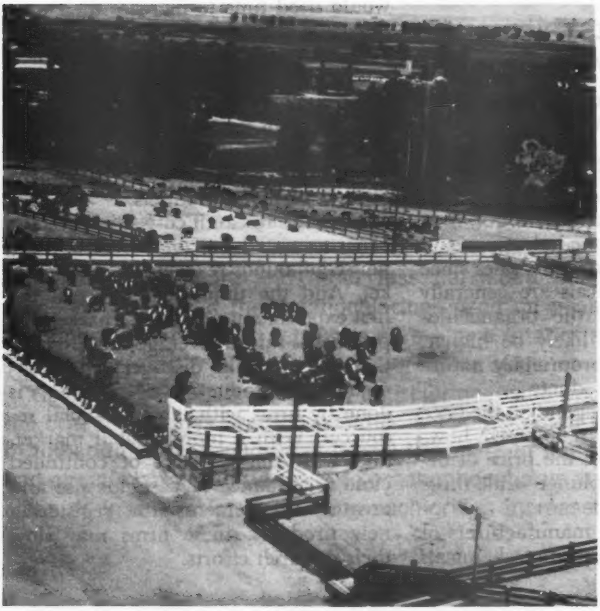
The Wisconsin study covered 10 years. During the first five seasons, the insecticides were applied at a rate of 5 pounds per year—a total of 25 pounds over the entire period. Then all treatments were halted—but the fields were still tested annually for the next 5 years to determine residues.

As long as insecticides were being applied, residues in the soil kept building up. They reached their peak concentration of 19 percent of the totally applied dosage after five growing seasons.

Test crops grown on the treated soils reached their peak sooner—in the third year of the experiment. The researchers weren't sure of the exact reasons for the earlier cutoff in insecticide absorption—perhaps the plants reached a residue absorption threshold or were able to break down certain amounts of insecticides that they'd absorbed.

As soon as insecticide applications stopped, residues in the soil and in the crops began to taper off.

The Wisconsin researchers used extremely high amounts of two very potent insecticides on their soils. In practice, the amounts and the residues would probably be smaller than those in the Wisconsin test.



PORTRAIT OF A FARM

To give our readers a clearer picture of U.S. farming in all its modern diversity, Agricultural Situation presents the sixth in a series of farm photo-essays. These farms have been selected by USDA farm management specialists as typical of good commercial farm businesses in various production areas.

They are *not* average farms . . . they are definitely above average. But they are not showplaces either. They represent the modern farm businesses that can be readily found in their production areas, and which produce the bulk of America's farm products today.

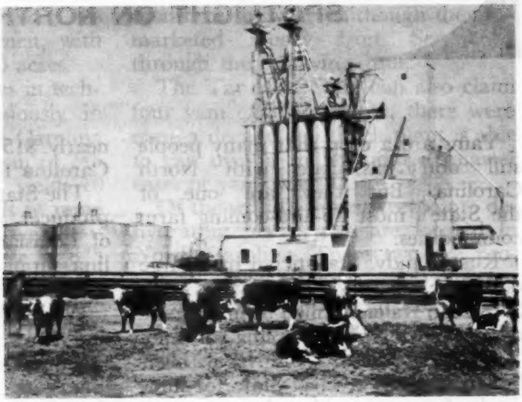
America's demand for beef has been growing rapidly, and most of the increase has been met by large specialized feedlots that buy their feed from other farmers and concentrate on taking full advantage of mechanization and the science of animal nutrition.

The Alkire Brothers cattle feedlot is typical of these big new feedlots. It lies on the flat eastern Colorado plains some 60 miles northeast of Denver, surrounded by irrigated farmland producing alfalfa, corn, silage, and sugar beets.

The sloping, sandy soil helps keep the feedlot dry, and the irrigated fields surrounding it help to supply feed for the cattle.

The climate is mild both winter and summer—an important consideration in cattle comfort and, therefore, costs. Summer days occasionally get into the nineties, with winter temperatures dropping into the twenties. Low humidity makes both heat and cold easier to bear.

The Alkire Brothers can feed 5,000 cattle at a time, turn out between



10,000 and 13,000 finished slaughter cattle per year.

The raw materials for a feedlot are cattle and feed. The feedlot is in the midst of a rangeland area, so most of the feeders are purchased from nearby Colorado, Nebraska, and Wyoming. Alkire Brothers specializes in feeding heifers because they are cheaper and readily available (most feeders prefer steers). Incoming cattle weigh about 700 pounds.

Practically all of the feed is purchased. When the cattle are first brought in, they get a starting ration—half is grain; the remainder is corn silage, alfalfa hay, dried sugar beet pulp, brewery byproducts, and a commercial protein supplement.

On full feed, the cattle get a high-concentrate ration that is 90 to 95 percent grain. Most of the grain is corn, purchased locally or in Nebraska, though wheat and milo are fed if the relative prices warrant.

It takes about 8 pounds of feed to produce a pound of meat.

Alkire Brothers have their own feedmill, and the feed is distributed by a self-unloading truck along rows of feedbunks at the edges of the pens. A concrete apron runs along the feedbunks to help keep the cattle out of mud during wet weather.

The finished cattle weigh 950 to 1,050 pounds, and 95 to 100 percent of them grade "U.S. Choice." A national chain of food stores buys the feedlot's entire output. The cattle are slaughtered at nearby Fort Morgan and Sterling, or in Denver. The feedlot owners have a one-third interest in the slaughter plant at Sterling.

The Alkire Brothers need outside financing, since it takes about $1,500,000 to buy 5,000 head of cattle and feed them out to market weight. The owners get their financing from a nearby bank, and are required to maintain a 25 percent margin in feed and/or cattle.

In 1965, the owners' net worth in the business was about $300,000. By 1969 it had risen to slightly over $900,000, and they plan to expand their operation by 5 to 10 percent each year.

SPOTLIGHT ON NORTH CAROLINA YAMS

Yams are a crop that many people still don't associate with North Carolina. But they are one of the State's most up-and-coming farm commodities.

Russ Handy, Statistician in Charge of SRS' Crop and Livestock Reporting Service in Raleigh, filled us in on some details about North Carolina yams.

Actually, these roots have been grown in the Tar Heel State for hundreds of years, but it's only in the past 10 or 15 that they've become important commercially. Yams are now worth nearly $15 million annually to North Carolina farmers, Handy says.

The State is the Nation's No. 2 yam producer, its output trailing only that of Louisiana. Last year, North Carolina supplied approximately a fourth of the U.S. total.

What's the difference between a yam and a sweetpotato? Robert B. Jenkins, executive secretary of the North Carolina Yam Commission, Inc.—the industry's promotion organization—admits that question often arises, and it's a tough one to answer.

True yams belong to a separate species of plant which isn't grown commercially in North Carolina. However, the State's sweetpotato industry has adopted the term yam for its tender, moist, soft-fleshed sweetpotatoes. (Actually all yams commercially produced and marketed in the United States are sweetpotatoes.)

The Yam Commission lists about 2,000 growers. Yams are the No. 1 enterprise of many of these men, with several planting 100 to 1,000 acres.

Yields, because of advances in technology, have risen tremendously in recent years. In 1969, North Carolina growers had an average output of 245 bushels per acre, 1½ times yields 10 years earlier. However, yields of more than 600 bushels per acre aren't unusual. And the record to date is 845 bushels on a measured acre.

North Carolina is also one of the country's leading areas in yam marketing and processing—thanks, in part, to the newness of its industry. Ultramodern curing and storage facilities for "fresh" yams and the latest in processing equipment have spurred industry growth.

There are 40 to 45 "fresh market" yam shippers in North Carolina with the capacity to cure and store over 3 million bushels. "Fresh" cured North Carolina yams are available every month of the year—although they are marketed mostly from September through the following June.

The Tar Heel State can also claim four yam canning plants; there were none a decade ago. Each plant is able to can over a million and a quarter cases of yams yearly.

Of the world's three sweetpotato dehydrating plants, two are located in North Carolina. These two are producing over a million pounds of flakes annually. Most of the dehydrated flakes are sold to institutional outlets, but some are marketed in retail stores.

THE CHANGING SCENE: FARM MANPOWER

The shrinking farm labor force in the mid-1960's forced high-production farmers to woo competent labor with increased wages.

But operators of large-scale farms, with a big investment in machinery and technology, found the high cost of labor worthwhile. They used only 1 man-hour to make $100 in sales in 1964, compared with 3½ hours on small farms. Two years later the gap had widened even more, when the small farm took 5 man-hours to 1 on the large farm to get the same return. It's likely the difference is still increasing.

There are several reasons why the manpower scene changed in the 1960's: Off-farm employment became more plentiful and more attractive—with higher pay, shorter hours. At the same time, there was a general increase in demand for farm products.

Operators of some family units had to hire workers to replace family members who were contributing to family income with better paying off-farm work. The share of U.S. farms employing only family help declined 25 percent between 1964 and 1966.

Although fewer family members worked on farms, family workers still accounted for most of the man-hours on all types of units by increasing their share of total farm work time.

Because of mechanization on cash grain farms, and improved operating methods on tobacco farms, less unskilled labor was used. But, in 1960's, the operators of dairy and other livestock units, who were seeking year-round hired hands, found it difficult to compete against more attractive work hours in off-farm employment. So they made up the difference with an increased share of family labor. Operators also performed more of the farm-work themselves, averaging some 55 hours a week.

outlook

Digested from outlook reports of the Economic Research Service.
Forecasts based on information available through August 1,1970

SOYBEAN CARRYOVER CUT . . . Supplies at 1969/70's outset were record high—more than a 10th above the previous year. But demand this year has soared. Use is up a fourth, exceeding last fall's crop by nearly 8%. The way things look now, carryover on September 1 will be cut back to approximately 240 million bushels.

•

SOYBEAN CRUSH in 1969/70 will probably total around 725 million bushels, a gain of some 20% over last year and the sharpest annual increase on record. Back of the extra-big crush . . . continuing strong demand for oil and meal and the best processing margins in 25 years.

•

SOYBEAN EXPORTS during the first three-quarters of the year were up about two-fifths from the same 1968/69 period. The brisk pace points to a new high in U.S. shipments—415 million bushels. Compare that with 287 million in 1968/69.

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1970 SOYBEAN ACREAGE . . . Soybeans planted alone for all purposes were estimated July 1 at a record 42.4 million acres. This is about 1% above both 1969 and 1968. Producers expected to harvest 41.6 million acres for beans, 98% of the acres planted.

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HOG HAPPENINGS . . . Look for a big increase in slaughter and sharply lower hog prices in first half 1971 if hog producers carry out their plans to have 17% more sows farrow June–November. The larger fall crop in prospect is an extension of the production increase that got underway earlier this year. By fall, pork supplies will be up and hog prices well below last year.

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HOG PRODUCERS could alter the outlook some by tempering their expansion plans. Also, slaughter weights—which have been run-

ning above those last spring—could be held in check this fall. This would help modify the sharp prospective increase in pork production.

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PORK PRODUCTION PICKUP now underway reflects farmers' response to relatively favorable hog prices in relation to corn prices this past year. In second half 1969, when producers were making plans for the 1970 spring pig crop, the hog-corn price ratio averaged 22.3—more than 40% above the 1959–68 average. The ratio continued nearly as high in first half 1970.

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CIGARETTE SITUATION . . . Output during the year ended June 30, 1970, was about 3% under the 573 billion cigarettes produced in 1968/69. While exports were record high, domestic use was down . . . the result of rising prices and continuing antismoking publicity.

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CIGARS, in contrast, are now recovering from the 6-year consumption low they hit in 1968/69. Last year U.S. smokers puffed away on 4% more cigars than the 7.8 billion they smoked in 1968/69. Cigarillos made up almost a third of last year's cigar sales, compared with only 13½% at the start of the sixties.

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MILK OUTPUT during first half 1970 reached nearly 60½ billion pounds, slightly above last year's pace. Second-half production could also top 1969 if cow numbers continue down at their current slow rate and output per cow is up.

●

DAIRY PRODUCT PRICES, on a wholesale basis, have been pretty steady since the April 1 price support increases. Cheddar cheese prices through July were a bit above support levels, butter and nonfat dry milk at or close to support. Smaller seasonal price gains appear likely in August–December than last year.

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CITRUS CROP this season will total about 1% bigger than last year. The orange crop picked out about 2% larger . . . grapefruit production dipped 1% . . . lemon output was about the same.

●

ORANGE PRICE PICTURE . . . Processing prices are under pressure. The larger-than-average volume of fruit that moved to processors in 1969/70 and about a tenth higher juice yields per box in Florida are resulting in big supplies. However, fresh fruit prices this summer are above last year.

FARMER PRODUCTIVITY . . . At the turn of the century, the average U.S. farmworker produced enough food, fiber, and tobacco for himself and six others. In 1969 the figure came to 45 persons, including the farmer and six people living abroad. That compares with 43 people in 1968—five of whom were foreigners.

•

AGRIBUSINESS ASSIST . . . Helping farmers achieve these impressive gains in on-farm productivity are the many workers in the farm input or marketing industries. Every farmworker is now backed up by more than three nonfarm employees located at both ends of the food, fiber, and tobacco pipeline. Of course, modern technology also helps.

STATISTICAL BAROMETER

Item	1957-59	1969	1970—latest data available	
Prices paid by farmers	100	114	118	July
Prices paid, interest, taxes, wage rates	100	127	133	July
Parity ratio (1910-14=100)	—	74	74	July
Consumer price index, all items	100	128	135	June
Food	100	126	133	June
Agricultural exports ($ bil.)	4.2	5.7	.6	June
Agricultural imports ($ bil.)	3.9	4.9	.5	June
Disposable personal income ($ bil.)	321.5	629.7	660.4	(²)
Expenditures for food ($ bil.)	66.3	103.6	109.0	(²)
Share of income spent for food (percent)	20.6	16.5	16.5	(²)
Farm food market basket: ¹				
Retail cost ($)	983	1,173	1,227	June
Farm value ($)	388	477	480	June
Farmers' share of retail cost, percent	39	41	39	June
Realized gross farm income ($ bil.)	36.5	54.6	56.2	(³)
Production expenses ($ bil.)	24.9	38.4	40.1	(³)
Realized net farm income ($ bil.)	11.6	16.2	16.1	(¹)

¹ Average quantities per family and single person household bought by wage and clerical workers 1960-61 based on BLS figures.
² Annual rate, seasonally adjusted first quarter.
³ Annual rate, seasonally adjusted second quarter.

OPEN LETTER TO OUR READERS

Editor's Note: The May Agricultural Situation carried a story about "Talking Eggs." Do unhatched eggs communicate with each other? If so, is this why they hatch at about the same time though laid weeks apart? Dr. Harry D. Muller of Colorado State University set out to investigate the matter.

One of our readers wrote us questioning the value of this research. He said everyone with common horse sense knows eggs hatch at about the same time, regardless of when they're laid, because the embryos don't start to grow until the hens begin to set or the incubators are started.

We asked Dr. William E. Shaklee, Principal Poultry Geneticist with the Cooperative State Research Service here in Washington, D.C., to reply. We thought his answer might interest other readers, too.

Dear Sir:

You're right. Sometimes it seems that some of our scientists are not using good common sense in some of their research. However, modern scientists are trained to look for unusual methods and to use sophisticated tools to solve tough problems. Most of the easy questions have been answers by now and the ones which remain sometimes require uncommon measures.

For example, anyone using common horse sense would know that you can't get anywhere incubating eggs from turkeys which have not been mated. Yet in 1953 Dr. M. W. Olsen at Beltsville did just that, and discovered that parthenogenesis occurred and resulted in fatherless turkeys. Some people may still wonder about the value of fatherless turkeys, but they have turned out to have tremendous interest for science.

Another example involves hybrid corn. I am sure many people thought those scientists were crazy when they went out into the fields and tied paper bags over the corn tassels so they could produce inbred lines. But inbred lines were necessary before hybrid corn could be produced. And who can say how much hybrid corn has meant to American agriculture?

Perhaps Dr. Muller is wrong in his ideas about talking eggs. But the only way he can find out is to conduct research on the problem. And if he learns something new it could mean considerable improvement in incubation efficiency.

Sincerely yours,

William E. Shaklee

WILLIAM E. SHAKLEE,
Principal Poultry Geneticist.

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